

REMARKS

Claims 1-7 and 9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsubara (JP 11-250900) ("Matsubara") and Oguro et al. (JP 11-158652A) ("Oguro"). Claims 1-9 are rejected under 35 U.S.C. §103(a) as being unpatentable over Matsubara, Oguro and the "admitted" prior art.

Matsubara discloses a method of manufacturing an electrode which includes removing at least part of the surface of a current collector by etching and simultaneously depositing a thin film on the surface of the current collector subjected to the etching step. The positions of the Office are believed to be, first, that the "removing" and "deposition" steps of claim 1 of the present application read on the etching step and coating layer formation step of Matsubara and, second, that it would be obvious to use a surface-treated current collector and, specifically, a current collector treated according to the method of Oguro, in the method of Matsubara.

Reconsideration and removal of the 35 U.S.C. § 103(a) rejections are respectfully requested. The proposed modification of the method of Matsubara will not result in the method of the present invention because the coating layer formed on the etched current collector of Matsubara is not an electrode. The coating layer formed in the method of Matsubara is intended to improve the conductivity between a collector and an electrode layer. Thus, the coating layer of Matsubara is, itself, not an electrode layer. In Matsubara the electrode is formed in a subsequent step.

The thin film of active material deposited on the etched current collector in the method of the present invention cannot be interpreted as being the coating layer of Matsubara because it is well known in the field of lithium secondary batteries that the term "active material" means the material contained in the electrode layer, which absorbs and releases lithium during charge and discharge. In Matsubara, an active material is contained in the electrode layer (see claim 2 of the enclosed copy of a

PATENT APPLN. NO. 10/015,774  
RESPONSE UNDER 37 C.F.R. §1.111

**PATENT  
NON-FINAL**

mechanical translation of the claims of Matsubara obtained from the home page of Japanese Patent Office).

Notwithstanding that the claims of the present application as originally presented cannot properly be interpreted as reading on the method of Matsubara (modified as proposed in the Action), claim 1 has been amended to recite that the thin film composed of active material deposited on the surface of the current collector subjected to said etching step forms the electrode.

Removal of the 35 U.S.C. § 103(a) rejections is believed to be in order and is respectfully solicited.

The foregoing is believed to be a complete and proper response to the Office Action dated March 28, 2003, and is believed to place this application in condition for allowance. If, however, minor issues remain that can be resolved by means of a telephone interview, the Examiner is respectfully requested to contact the undersigned attorney at the telephone number indicated below.

In the event that this paper is not considered to be timely filed, applicants hereby petition for an appropriate extension of

PATENT APPLN. NO. 10/015,774  
RESPONSE UNDER 37 C.F.R. §1.111



RECEIVED  
JUN 02 2003  
TC 1700

PATENT  
NON-FINAL

time. The fee for any such extension may be charged to our Deposit  
Account No. 111833.

In the event any additional fees are required, please also  
charge our Deposit Account No. 111833.

Respectfully submitted,

KUBOVCIK & KUBOVCIK

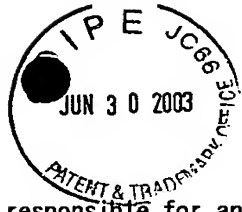
A handwritten signature in black ink, appearing to read "Ronald J. Kubovcik".

Ronald J. Kubovcik  
Reg. No. 25,401

Atty. Case No. MAM-008  
The Farragut Building  
Suite 710  
900 17th Street, N.W.  
Washington, D.C. 20006  
Tel: (202) 887-9023  
Fax: (202) 887-9093  
RJK/cfm

## \* NOTICES \*

Japan Patent Office is not responsible for any damages caused by the use of this translation.



1. This document has been translated by computer. So the translation may not reflect the original precisely.
2. \*\*\*\* shows the word which can not be translated.
3. In the drawings, any words are not translated.

---

**CLAIMS**


---

**[Claim(s)]**

[Claim 1] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries characterized by providing the following of having at least the process which forms an electrode layer on a charge collector. The etching process which uses any one method of plasma etching, sputter etching, and the ion beam etching, and \*\*\*\*\* the aforementioned current collection body surface in reduced pressure atmosphere before the process which forms the aforementioned electrode layer on the aforementioned charge collector. The process which forms in the aforementioned current collection body surface the coat layer which has conductivity.

[Claim 2] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 1 characterized by the aforementioned electrode layer containing any one sort of a positive active material and the negative-electrode active material.

[Claim 3] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 2 characterized by the aforementioned positive active material having the multiple oxide which contains a lithium, sodium, and any one sort of metals of aluminum at least.

[Claim 4] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 2 that the aforementioned negative-electrode active material is characterized by including any one sort of carbon, a lithium, sodium, and aluminum at least.

[Claim 5] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 1 characterized by performing simultaneously the aforementioned etching process and the process which forms the aforementioned coat layer.

[Claim 6] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 1 that the process which forms the aforementioned coat layer is characterized by using vacuum deposition, electron beam evaporation, a spatter, ion plating, CVD, plasma CVD, and any one method of the ion implantation.

[Claim 7] The manufacture method of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 1 characterized by the aforementioned coat layer containing any one sort of carbon, platinum, and gold at least.

[Claim 8] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries which is characterized by providing the following and which has at least a means to form an electrode layer on a charge collector. An etching means by which a means to form the aforementioned electrode layer \*\*\*\*\* the aforementioned current collection body surface in reduced pressure atmosphere using any one equipment of plasma etching, sputter etching, and the ion beam etching. A means to form in the aforementioned current collection body surface the coat layer which has conductivity.

[Claim 9] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 8 characterized by the aforementioned electrode layer containing any one sort of a positive active material and the negative-electrode active material.

[Claim 10] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 9 characterized by the aforementioned positive active

material having the multiple oxide which contains a lithium, sodium, and any one sort of metals of aluminum at least.

[Claim 11] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 9 characterized by the aforementioned negative-electrode active material containing any one sort of carbon, a lithium, sodium, and aluminum at least.

[Claim 12] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 8 to which a means to form the aforementioned coat layer is characterized by using vacuum deposition, electron beam evaporation, a spatter, ion plating, CVD, plasma CVD, and any one equipment of the ion implantation.

[Claim 13] The manufacturing installation of the electrode for nonaqueous electrolyte rechargeable batteries according to claim 8 characterized by the aforementioned coat layer containing any one sort of carbon, platinum, and gold at least.

[Claim 14] The electrode characterized by having the conductive coat layer formed between the aforementioned charge collector and the aforementioned electrode layer in the electrode for nonaqueous electrolyte rechargeable batteries which has at least the electrode layer formed on the charge collector and the aforementioned charge collector.

[Claim 15] The electrode according to claim 14 characterized by the aforementioned coat layer containing any one sort of carbon, platinum, and gold at least.

[Claim 16] The nonaqueous electrolyte rechargeable battery characterized by being produced using an electrode according to claim 14.

---

[Translation done.]